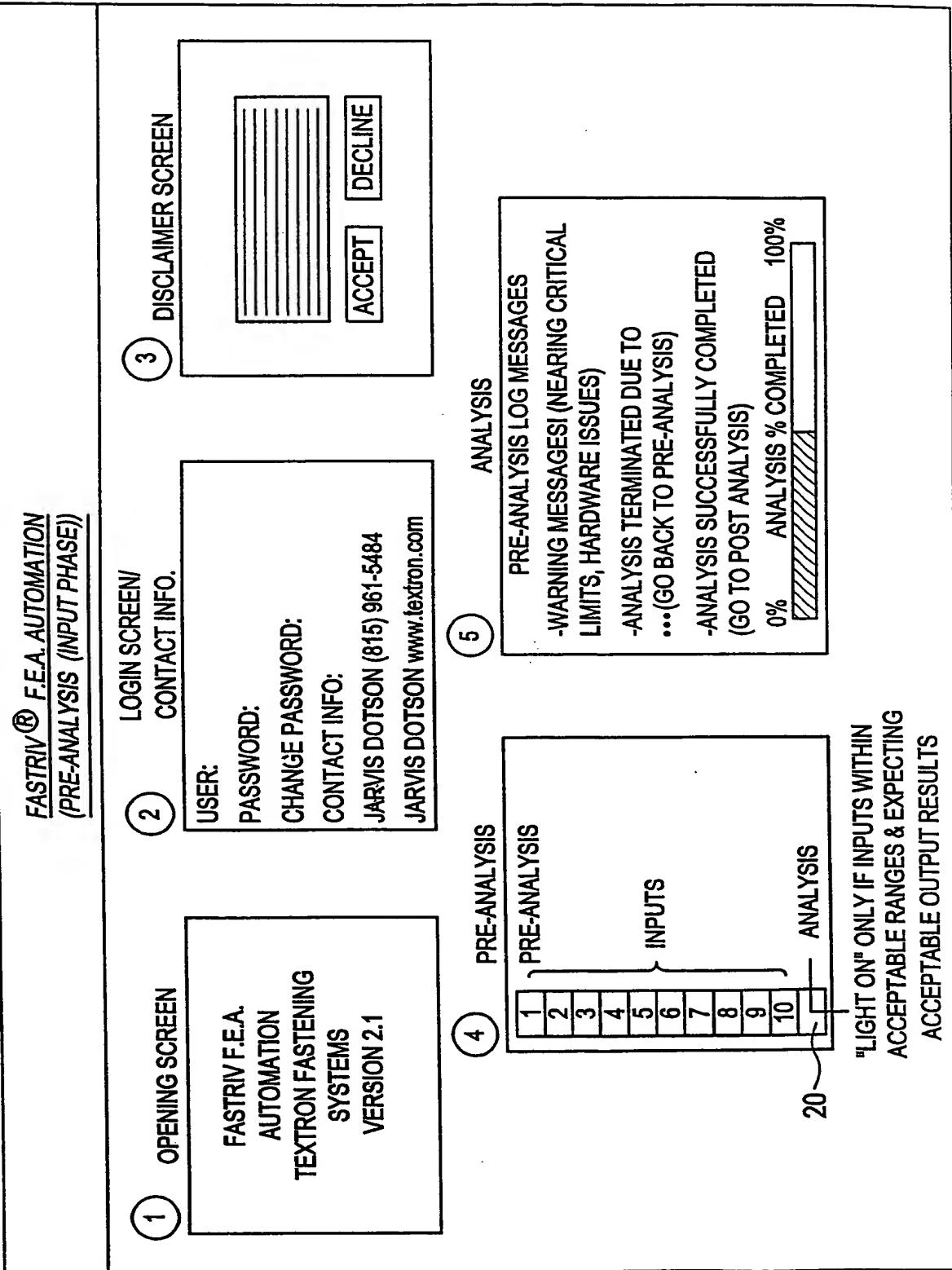


1/17

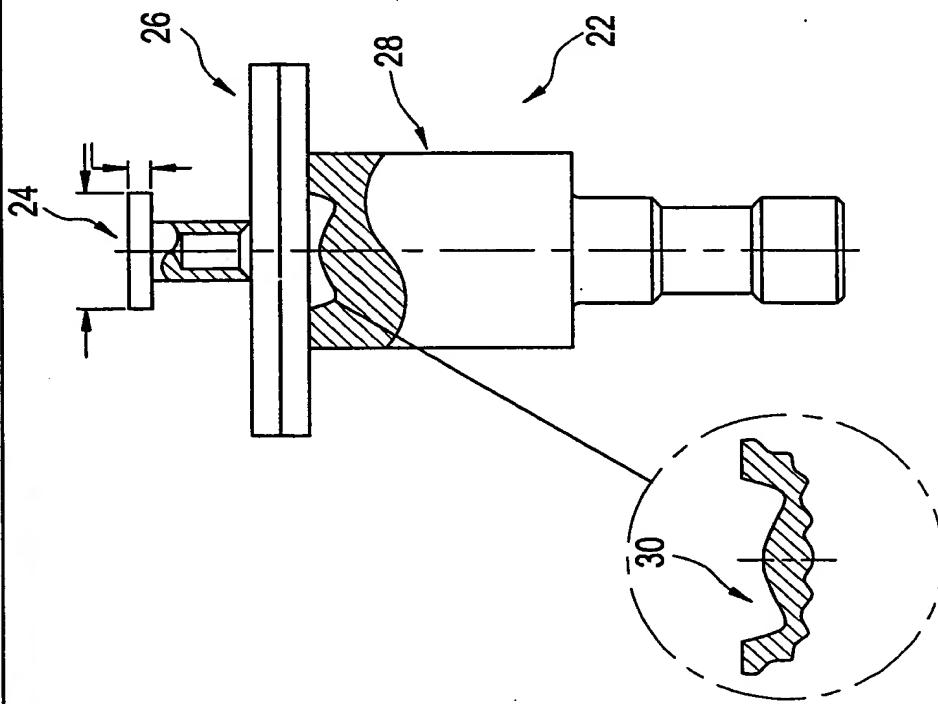
## FIG. 1



**FIG. 2**

**FASTRIV® F.E.A. AUTOMATION**  
**(PRE-ANALYSIS (INPUT PHASE))**

FILE	EDIT	PRINT
PROJECT DEFINITION		
RIVET DEFINITION		
JOINT DEFINITION		
INSTALLATION EQUIPMENT DEFINITION		
ANVIL DEFINITION		
PLUNGER DEFINITION		
DESIGN REQUIREMENTS		
DATABASE SEARCH		
F.E.A. PARAMETERS		
POST PROCESSOR		
ANALYSIS (LIGHT "ON" OR "OFF")		20



O 1 FEB  
FEB 06 2003

3/17

## FIG. 3

FASTRIV® F.E.A. AUTOMATION	
(PRE-ANALYSIS / PROJECT DEFINITION)	
FILE	EDIT
PROJECT DEFINITION	PRINT
RIVET DEFINITION	CUSTOMER NAME: _____
JOINT DEFINITION	DATE: _____
INSTALLATION EQUIPMENT DEFINITION	ANALYSIS: _____
ANVIL DEFINITION	APPLICATION DESCRIPTION: _____
PLUNGER DEFINITION	INTRODUCTION: _____
DESIGN REQUIREMENTS	BACKGROUND: _____
DATABASE SEARCH	RESULTS: _____
F.E.A. PARAMETERS	CONCLUSION: _____
POST PROCESSOR	PROJECT NUMBER: _____
ANALYSIS	(LIGHT "ON" OR "OFF")

20

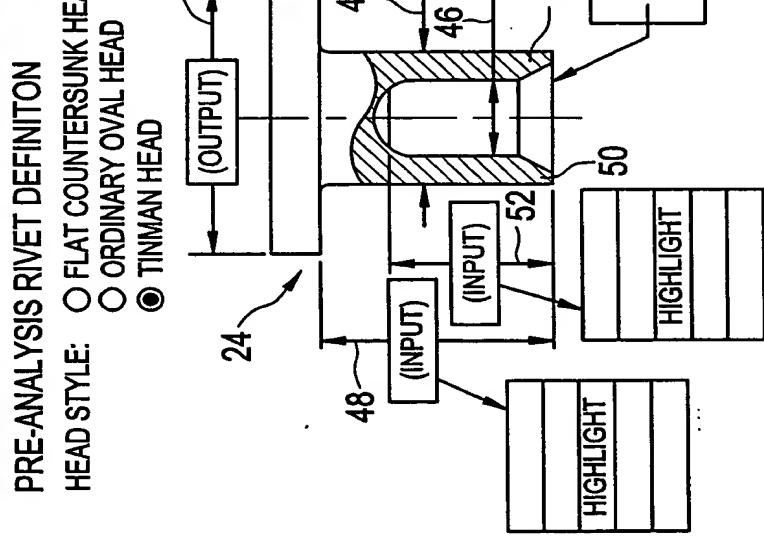
O I P E  
FEB 06 2003  
TRADEMARK CERTS  
RECEIVED

4/17

**FIG. 4**

**FASTRIV® F.E.A. AUTOMATION**  
**(PRE-ANALYSIS (RIVET DEFINITION))**

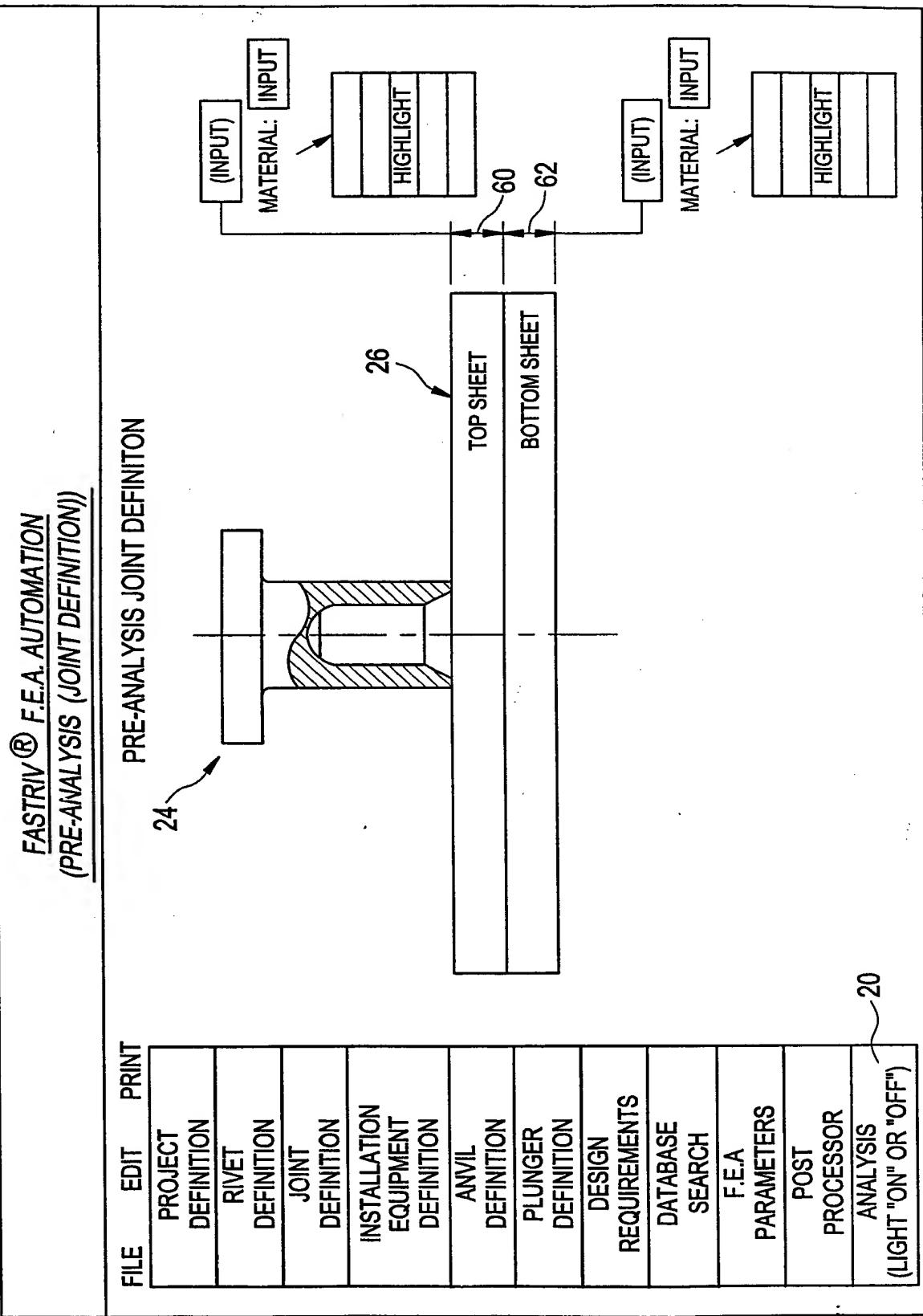
FILE	EDIT	PRINT	PROJECT DEFINITION	RIVET DEFINITION	JOINT DEFINITION	INSTALLATION EQUIPMENT DEFINITION	ANVIL DEFINITION	PLUNGER DEFINITION	DESIGN REQUIREMENTS	DATABASE SEARCH	F.E.A. PARAMETERS	POST PROCESSOR	ANALYSIS (LIGHT "ON" OR "OFF")
													20

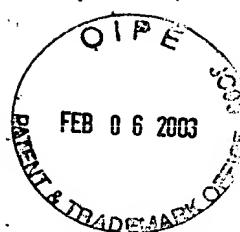




5/17

**FIG. 5**





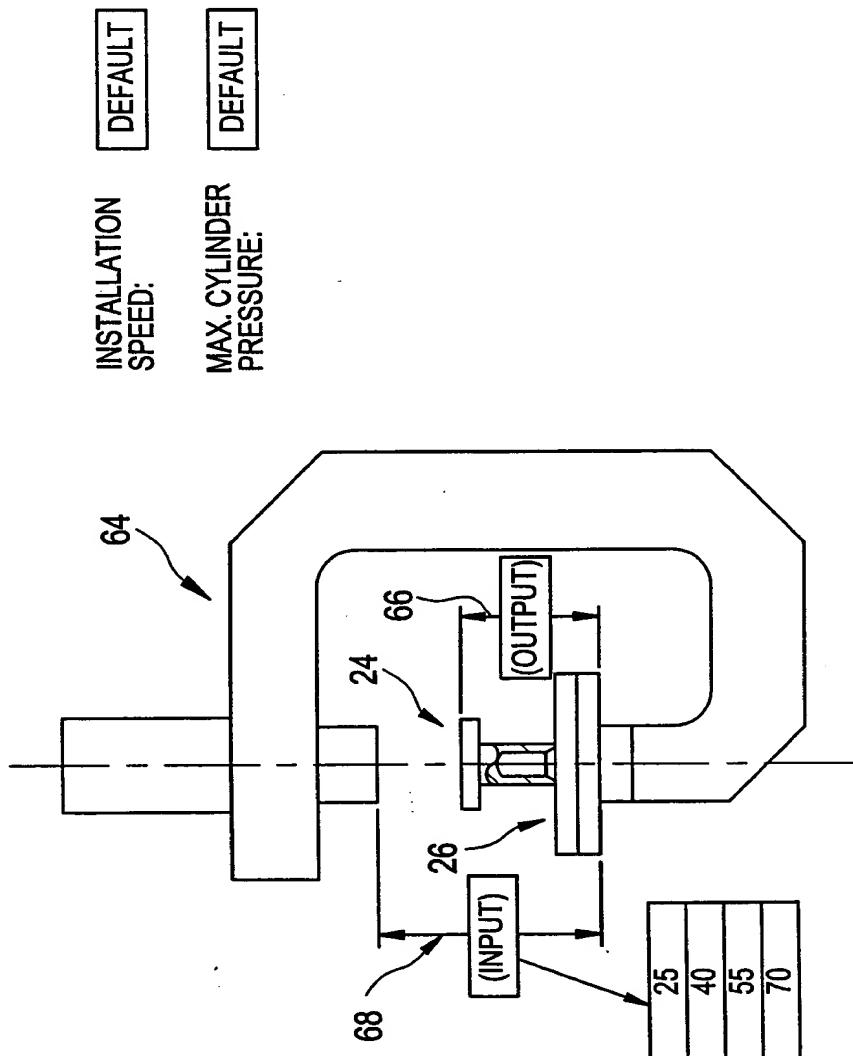
6/17

**FIG. 6**

**FASTRIV® F.E.A. AUTOMATION**  
**(PRE-ANALYSIS /INSTALLATION EQUIPMENT DEFINITION)**

FILE EDIT PRINT PRE-ANALYSIS /INSTALLATION EQUIPMENT DEFINITION

PROJECT DEFINITION	RIVET DEFINITION	JOINT DEFINITION	INSTALLATION EQUIPMENT DEFINITION	ANVIL DEFINITION	PLUNGER DEFINITION	DESIGN REQUIREMENTS	DATABASE SEARCH	F.E.A. PARAMETERS	POST PROCESSOR	ANALYSIS (LIGHT "ON" OR "OFF")
20	25	40	55	70						





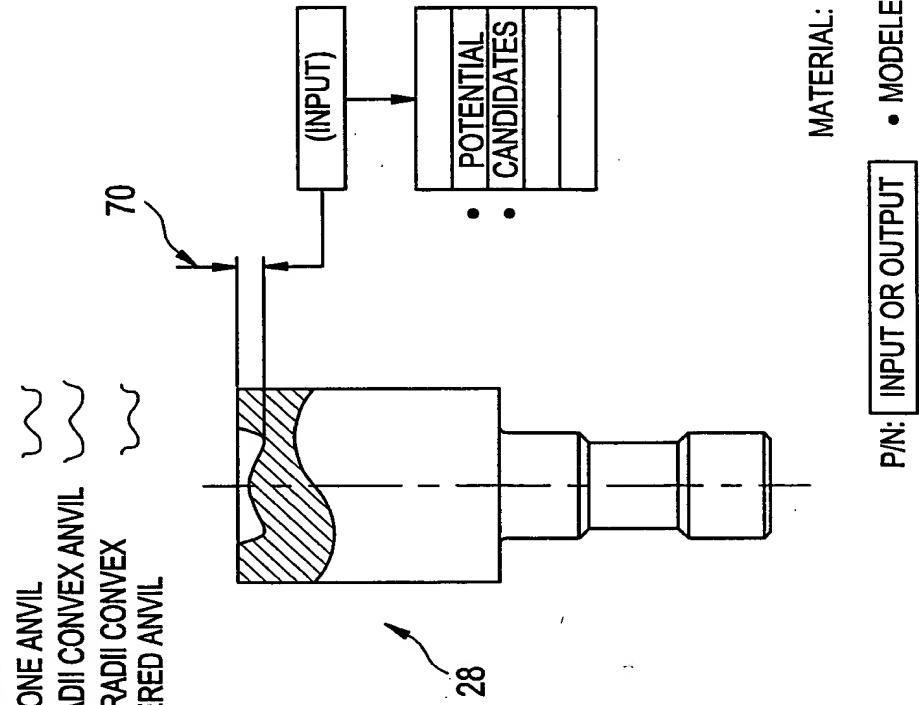
7/17

**FIG. 7**

**FASTRIV® F.E.A. AUTOMATION**  
**(PRE-ANALYSIS (ANVIL DEFINITION))**

FILE	EDIT	PRINT	PROJECT DEFINITION	RIVET DEFINITION	JOINT DEFINITION	INSTALLATION EQUIPMENT DEFINITION	ANVIL DEFINITION	PLUNGER DEFINITION	DESIGN REQUIREMENTS	DATABASE SEARCH	F.E.A. PARAMETERS	POST PROCESSOR	ANALYSIS (LIGHT "ON" OR "OFF")
------	------	-------	-----------------------	---------------------	---------------------	---	---------------------	-----------------------	------------------------	--------------------	----------------------	-------------------	-----------------------------------

**PRE-ANALYSIS ANVIL DEFINITION**





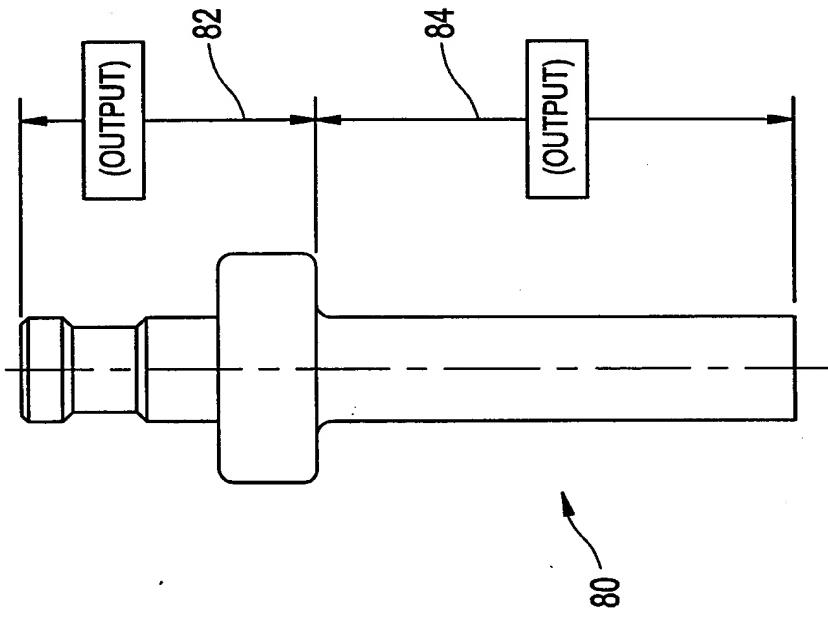
8/17

# FIG. 8

## FASTRIV® F.E.A. AUTOMATION (PRE-ANALYSIS (PLUNGER DEFINITION))

FILE EDIT PRINT

PROJECT DEFINITION	RIVET DEFINITION	JOINT DEFINITION	INSTALLATION EQUIPMENT DEFINITION	ANVIL DEFINITION	PLUNGER DEFINITION	DESIGN REQUIREMENTS	DATABASE SEARCH	F.E.A. PARAMETERS	POST PROCESSOR	ANALYSIS	(LIGHT "ON" OR "OFF")
20	80	82	84								20



- MATERIAL:  DEFAULT  
• MODELED AS RIGID

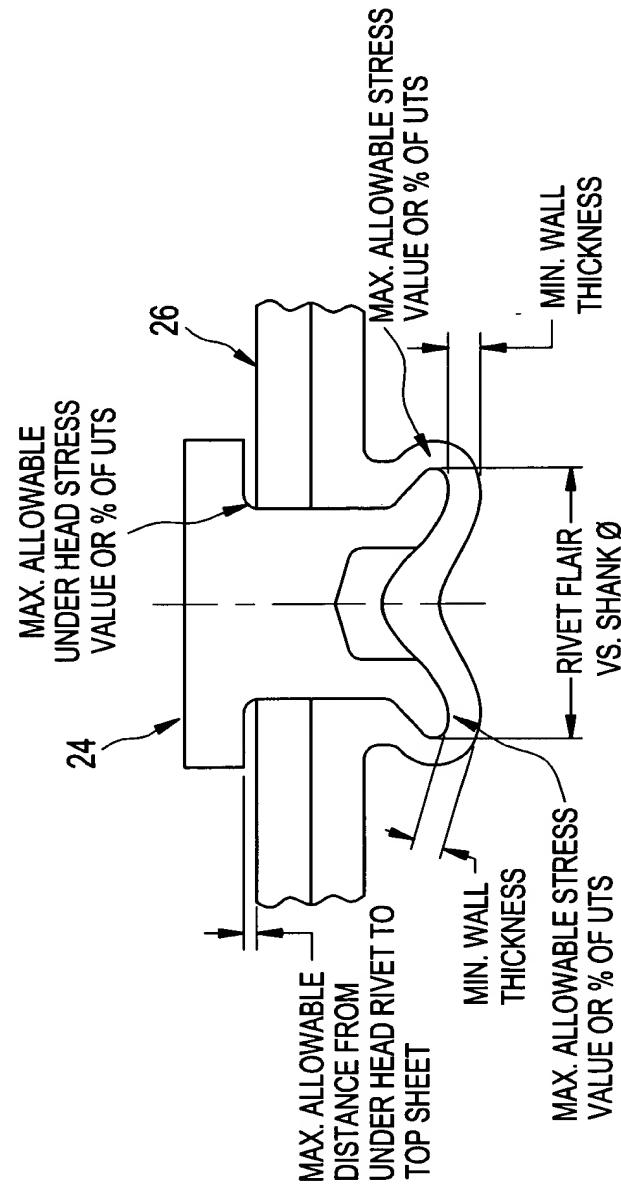


9/17

**FIG. 9**

**FASTRIV® F.E.A. AUTOMATION  
(PRE-ANALYSIS (DESIGN REQUIREMENTS))**

FILE	EDIT	PRINT
PROJECT DEFINITION		
RIVET DEFINITION		
JOINT DEFINITION		
INSTALLATION EQUIPMENT DEFINITION		
ANVIL DEFINITION		
PLUNGER DEFINITION		
DESIGN REQUIREMENTS		
DATABASE SEARCH		
F.E.A. PARAMETERS		
POST PROCESSOR		
ANALYSIS (LIGHT "ON" OR "OFF")		20



**RIVET JOINT  
STRENGTH REQUIREMENT**



10/17

## FIG. 10

### FASTRIV® F.E.A. AUTOMATION (PRE-ANALYSIS DATABASE SEARCH)

FILE	EDIT	PRINT
PROJECT DEFINITION		PRE-ANALYSIS DATABASE SEARCH
RIVET DEFINITION		THE ABILITY TO SELECT ANY OF COMBINATION OF THE INPUTS AT THIS STAGE. THIS WILL TIE INTO A CENTRAL DATABASE
JOINT DEFINITION		
INSTALLATION EQUIPMENT DEFINITION		
ANVIL DEFINITION		
PLUNGER DEFINITION		
DESIGN REQUIREMENTS		
DATABASE SEARCH		
F.E.A. PARAMETERS		
POST PROCESSOR		
ANALYSIS (LIGHT "ON" OR "OFF")		20

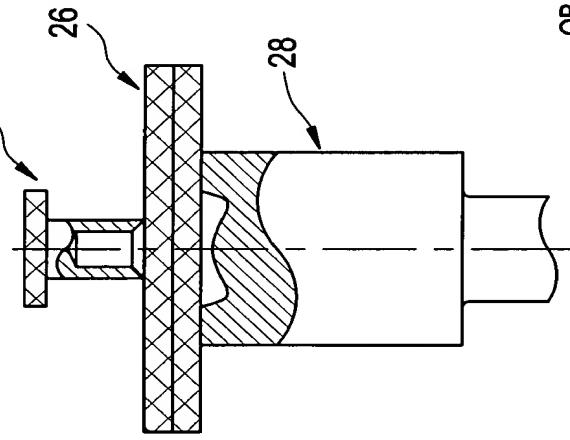


11/17

# FIG. 11

## FASTRIV® F.E.A. AUTOMATION (PRE-ANALYSIS (F.E.A. PARAMETERS))

FILE	EDIT	PRINT
PROJECT DEFINITION		
RIVET DEFINITION		
JOINT DEFINITION		
INSTALLATION EQUIPMENT DEFINITION		
ANVIL DEFINITION		
PLUNGER DEFINITION		
DESIGN REQUIREMENTS		
DATABASE SEARCH		
F.E.A. PARAMETERS		
POST PROCESSOR		
ANALYSIS (LIGHT "ON" OR "OFF")		20



- OBJECT:  RIVET (MESH, BCC)  
 TOP SHEET (MESH, BCC)  
 BOTTOM SHEET (MESH, BCC)

INTEROBJECT BCC  
OK

ADVANCED SETTINGS

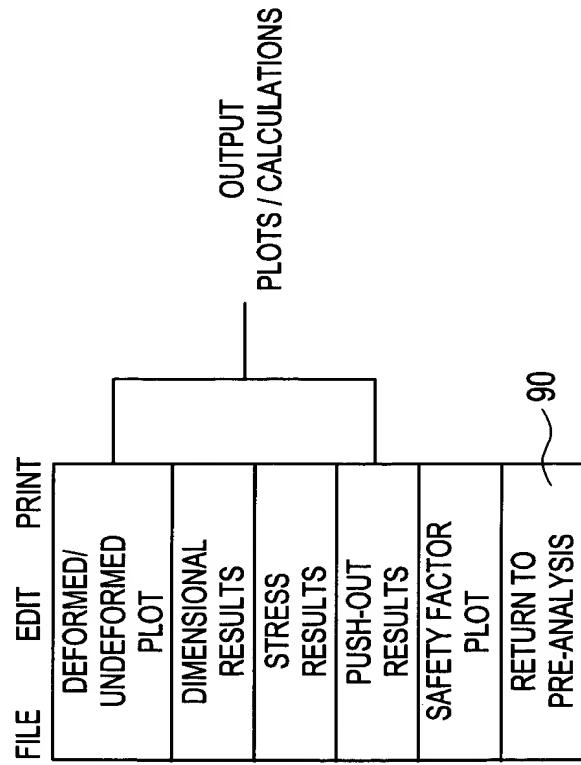


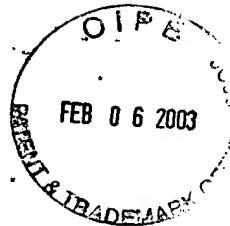
12/17

FIG. 12

FASTRIV® F.E.A. AUTOMATION  
POST-ANALYSIS

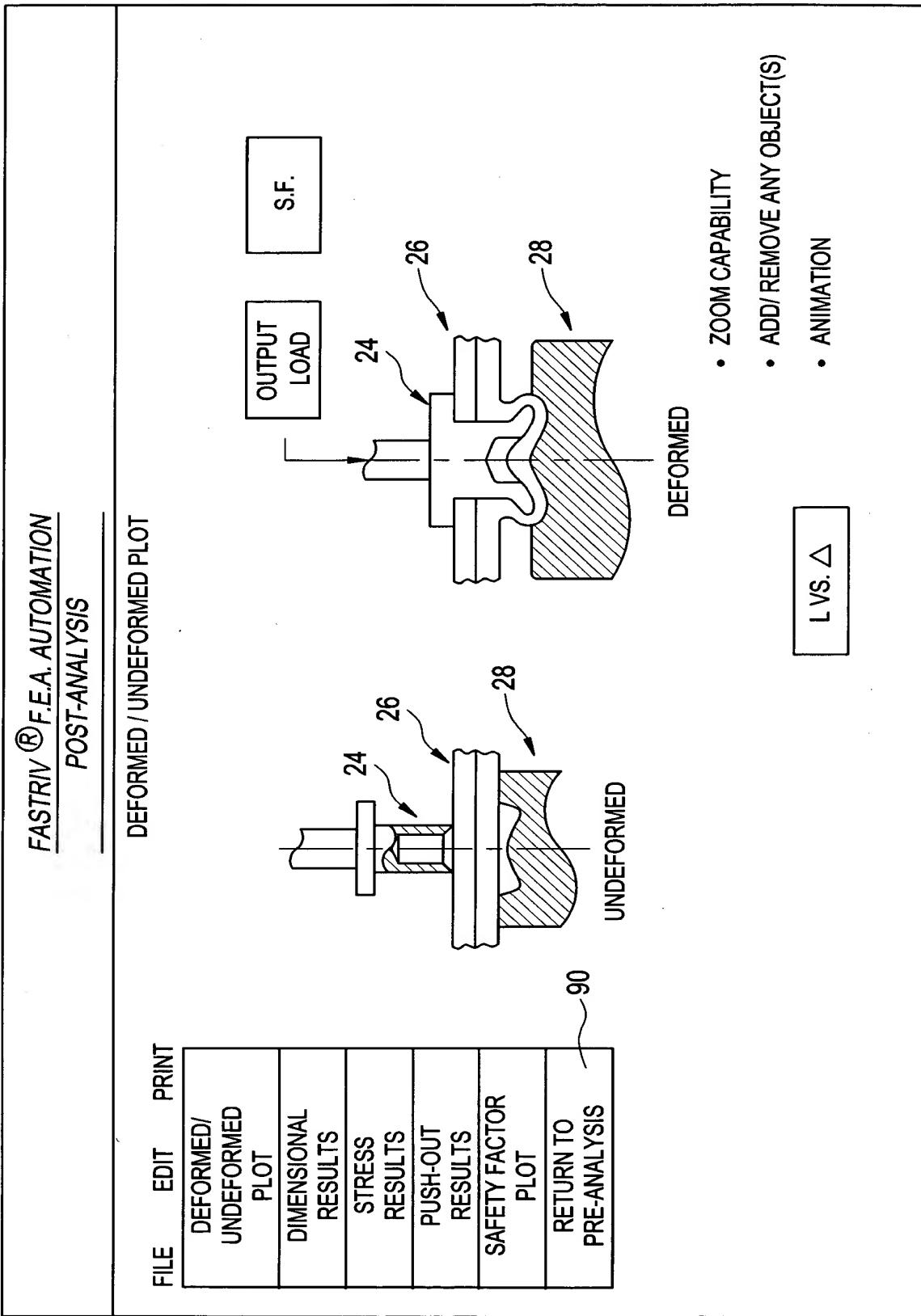
POST-ANALYSIS





13/17

FIG. 13

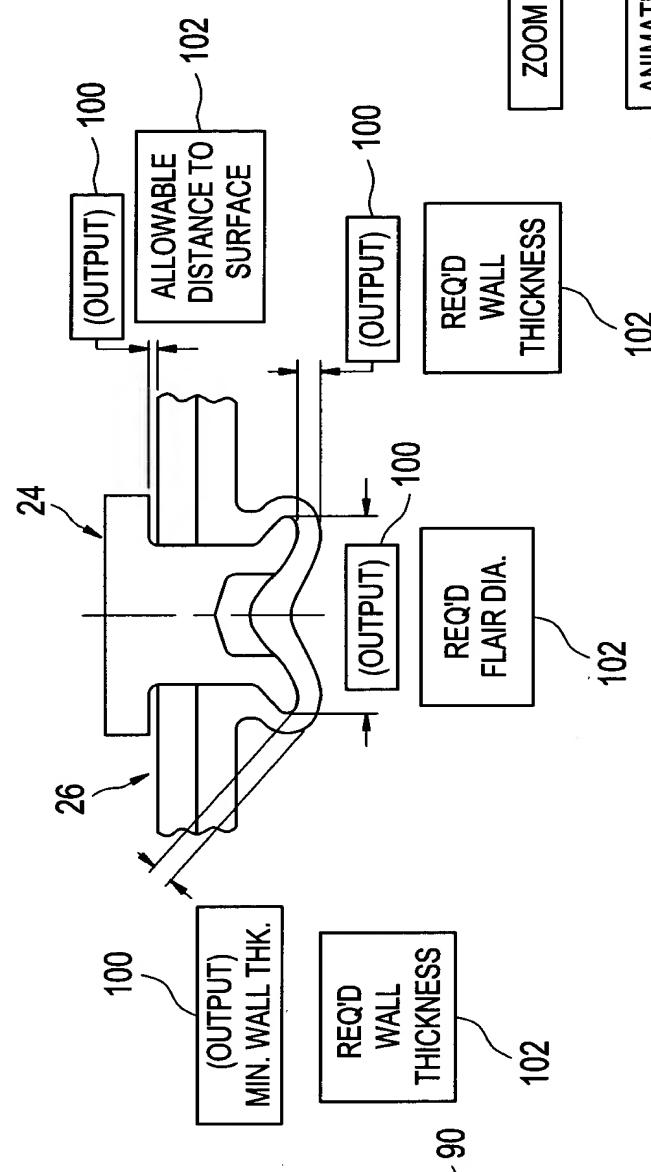


**FIG. 14**

**FASTRIV® F.E.A. AUTOMATION**  
**POST-ANALYSIS**

FILE	EDIT	PRINT
<b>DEFORMED/ UNDEFORMED PLOT</b>		
<b>DIMENSIONAL RESULTS</b>		
<b>STRESS RESULTS</b>		
<b>PUSH-OUT RESULTS</b>		
<b>SAFETY FACTOR PLOT</b>		
<b>RETURN TO PRE-ANALYSIS</b>		

**DIMENSIONAL RESULTS  
(DEFORMATION PLOT)**



**FIG. 15**

FASTRIV® F.E.A. AUTOMATION  
POST-ANALYSIS

FILE    EDIT    PRINT

DEFORMED/  
UNDEFORMED  
PLOT

DIMENSIONAL  
RESULTS

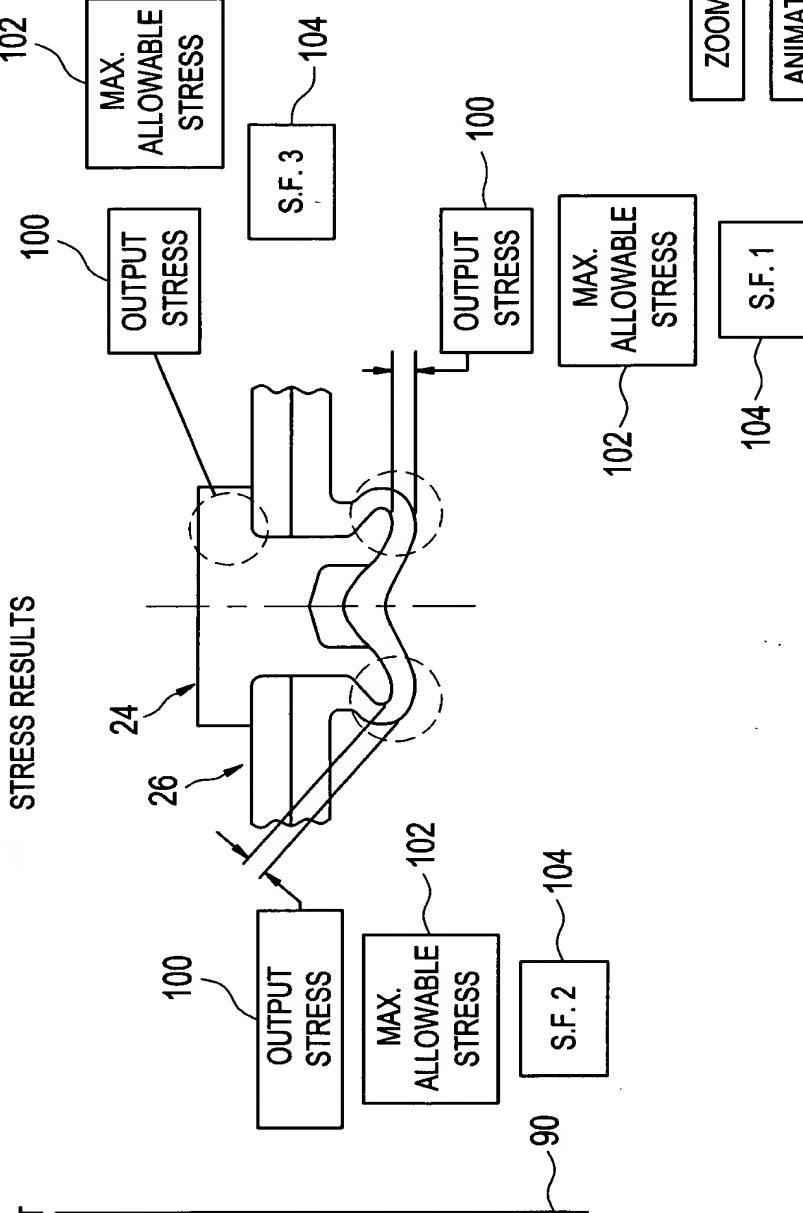
STRESS  
RESULTS

PUSH-OUT  
RESULTS

SAFETY FACTOR  
PLOT

RETURN TO  
PRE-ANALYSIS

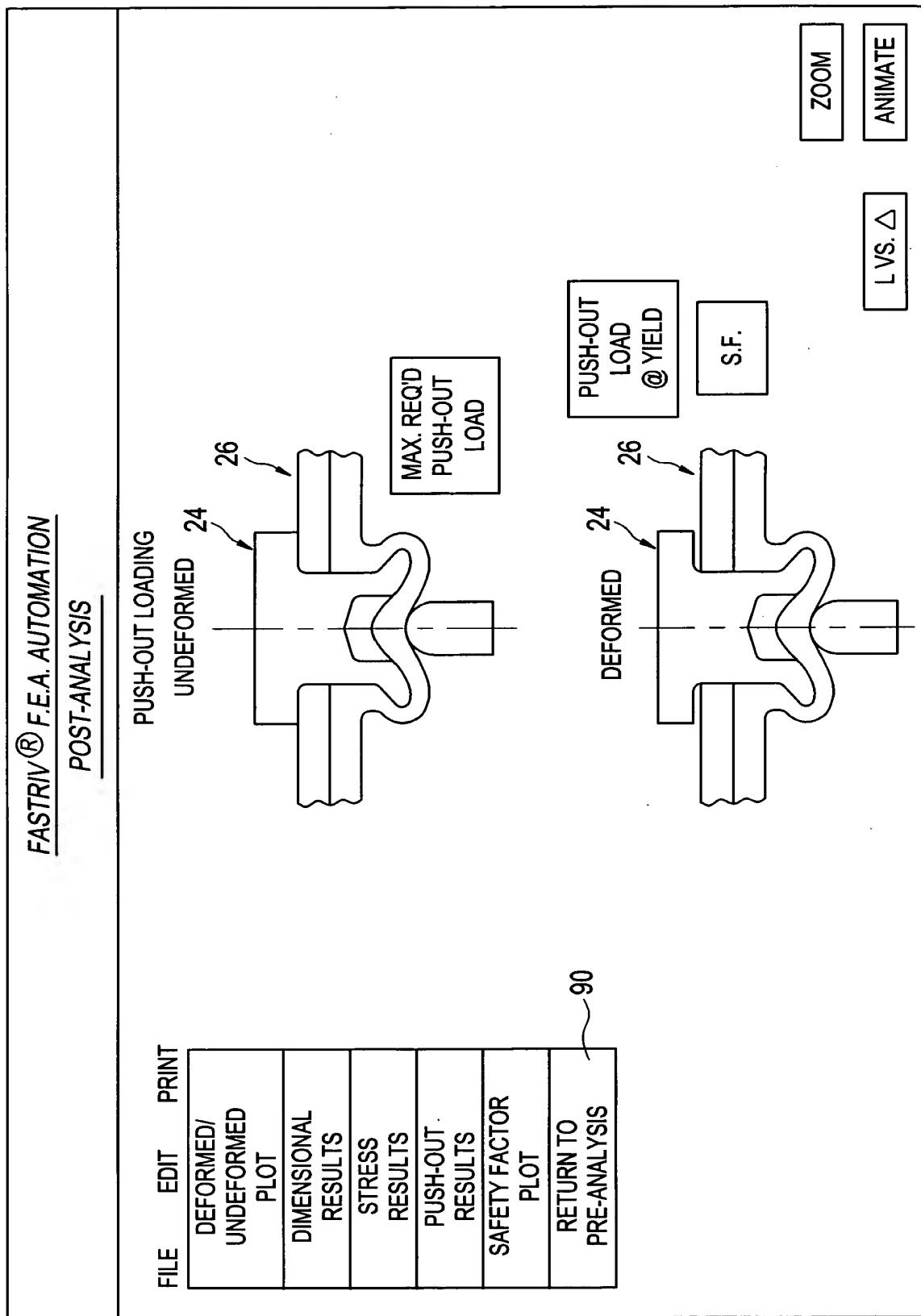
**STRESS RESULTS**





16/17

**FIG. 16**





17/17

FIG. 17

